

VARIABLE FREQUENCY DRIVES	FANS	AIR TERMINAL UNITS - MASTER SCHEDULE	AIR TERMINAL UNITS - BALANCING	AIR HANDLING UNITS
TAG SERVICE ENCLOSURE NOTES	FAN TYPES: PRV - POWER ROOF VENTILATOR IL - INLINE CENTRIFUGAL ILD - INLINE DUCT BLOWER US - UTILITY SET SWV - SIDEWALL VENTILATOR SWP - SIDEWALL PROPELLER PFSF - PENTHOUSE FILTERED SUPPLY FAN HPRE - HOODED PROPELLER ROOF EXHAUSTER	-TYPES: VAV-# - VARIABLE AIR VOLUME CAV-# - CONSTANT AIR VOLUME TYPE: SINGLE DUCT, W/ INTEGRAL REHEAT COIL AND "FIBER-FREE" INSULATION LINER. DAMPER SHAFT AND CONTROL	-REFER TO "AIR TERMINAL UNITS - MASTER SCHEDULE" FOR: TAG KEY: -PRESSURE REQUIREMENTS -MAX ALLOWABLE SOUND LEVELS	- WATER TYPE HEATING COIL CAPACITY BASED ON 200°F E.W.T./5 WATER TYPE COOLING COIL CAPACITY BASED ON 44°F E.W.T./5 - PERFORMANCE SHALL BE EQUAL OR SUPERIOR TO SCHEDULE
AH-1S AH-1 SUPPLY FAN SEE SPECIFICATIONS 1,2,3,4 AH-2S AH-2 SUPPLY FAN SEE SPECIFICATIONS 1,2,3,4	CE - CEILING MOUNTED EXHAUST UBE - UP BLAST EXHAUSTER	ENCLOSURE.	-REHEAT COIL SIZE AND CAPACITY SEQUENTIAL NUMBER AIR HANDLING UNIT	UNIT NUMBER AH-1 AH-2 -
HWP-1	TAG TYPE SERVICE / LOCATION CFM ESP (IN) MAX SONES DIA(IN) RPM MOTOR DATA HP(WATTS) VOLTAGE PHASE MFG. MODEL FAN CONTROL ACCY EF-1 CE RESTROOM/GRD FLR 225 0.5 2.0 PEO'D 1025 (101) 120 1 - 41 1,2,8,14,18	TYPE INLET SIZE (IN) MODEL NO. CLG MIN HTG MAX MIN MAX NO INLET STREAM MIN STREAM MIN STREAM MIN STREAM MIN MIN RAD DISCH MINLAT GPM RUN OUT MAX WTR MAX AIR ROWS SOUND MAX (NC) RAD DISCH MINLAT GPM RUN OUT MAX WTR MAX AIR ROWS (°F) GPM SIZE (IN) PD (FT HD) PD (IN) ROWS	TAG TYPE COOLING MIN HEATING MAX FLOW (GPM) SIZE NOTES	AREA SERVED NORTH SOUTH - UNIT CONFIG. HORIZ
CWP-1 CWP-1 SEE SPECIFICATIONS 1,2,3,4 CWP-2 SEE SPECIFICATIONS 1,2,3,4	EF-2 CE WEM. RR/1ST FLR 75 0.5 2.0 REQ D	VAV-6 6 - 400 80 240 1 0.25 0.35 25 25 95.0 1.0 3/4 5.0 0.5 2	V1-1 VAV-14 1570 942 942 2.71 3/4 - V1-2 VAV-8 500 150 300 0.86 3/4 -	MFG
CWP-3	EF-4 CE WEM. RR/2ND FLR 75 0.5 2.0 REQ'D 75 (67) 120 1 - 41 1,2,8,14,18 EF-5 CE MEN RR/2ND FLR 225 0.5 2.0 REQ'D 1025 (101) 120 1 - 41 1,2,8,14,18	VAV-10 10 - 1100 230 660 1 0.25 0.38 25 25 95.0 1.0 3/4 5.0 0.5 2	V1-2 VAV-8 500 150 300 0.86 3/4 - V1-3 VAV-8 610 366 366 1.05 3/4 - V1-4 VAV-8 590 295 354 1.02 3/4 -	CFM 7600 7600 - 10.1 W.G. 3.8 / 2.5 3.8 / 2.5 - / -
	EF-6 CE HAC/1ST FLR 75 0.5 2.0 AS REQ'D REQ	8	V1-4 VAV-8 590 295 354 1.02 3/4 - V1-5 VAV-8 460 138 276 0.79 3/4 - V1-6 VAV-6 200 60 120 0.50 3/4 -	WHEEL DIA. WHEEL TYPE AF AF
NOTES: 1 ALL VFD'S TO BE FROM SAME MANUFACTURER. 2 REFER TO EQUIPMENT SCHEDULES FOR MOTOR DATA. 3 FURNISH DRIVE WITH BYPASS	EF-8 SWP TRANSFORMER RM/ GRD FLR 712 0.1 7.7 REQ D REQ'D 1550 0.05 120 1 - - 31 1,7,16,17 EF-9 CE RESTROOM/RM 109AA 75 0.5 2.0 AS REQ'D 923 (67) 120 1 - - 41 1,2,8,14,18	VAV-16 16 - 2,800 580 1,680 1 0.25 0.48 25 25 95.0 5.0 1 5.0 0.65 2	V1-7 VAV-6 110 33 66 0.50 3/4 - V1-8 VAV-6 180 54 108 0.50 3/4 -	MOTOR H.P. 10 10 -
4 FURNISH DRIVE WITH COMMUNICATION INTERFACE.		CAV-5 5 - 300 300 300 1 0.25 0.18 25 25 95.0 1.0 3/4 5.0 0.5 2 CAV-6 6 - 400 400 400 1 0.25 0.35 25 25 95.0 1.0 3/4 5.0 0.5 2	V1-9 VAV-6 230 69 138 0.50 3/4 - V1-10 VAV-6 340 102 204 0.59 3/4 -	FACE AREA 15 15 - 288.5 239.8 -
	REQ'D ACCY: FAN CONTROL: FAN CONTROL: 1 STANDARD DISCONNECT, FACTORY MOUNTED & WIRED PROVIDED BY BAS CONTRACTOR: PROVIDED BY EC:	CAV-8 8 - 700 700 700 1 0.25 0.38 25 25 95.0 2.0 3/4 5.0 0.5 2 CAV-10 10 - 1,100 1,100 1,100 1 0.25 0.42 25 25 95.0 3.0 3/4 5.0 0.5 2	V1-11 VAV-8 420 126 252 0.73 3/4 - V1-12 VAV-6 300 90 180 0.52 3/4 -	ENT. AIR TEMP. 30 40 - LVG. AIR TEMP. 65 69 -
DUCT CONSTRUCTION/SEALING	2 GRAVITY BACKDRAFT DAMPER 21 TIME SCHEDULED DDC ON/OFF 3 INLET/OUTLET FLEX DUCT FLANGES 22 WALL MOUNTED DDC SPACE SENSOR 4 SPRING ISOLATORS 23 WALL MOUNTED THERMOSTAT - MOUNTED & 5. STANDARD FINISH SOLOD BY A BOUTEST	CAV-12 12 - 1,500 1,500 1,500 1 0.25 0.42 25 25 95.0 4.0 1 5.0 0.5 2 CAV-14 14 - 2,200 2,200 1 0.25 0.45 25 25 95.0 6.0 1 5.0 0.5 2	V1-13 VAV-6 320 96 192 0.55 3/4 - V1-14 VAV-8 430 129 258 0.74 3/4 -	
DUCT SYSTEM SMACNA SP CONST SEAL CL NOTES	5 STANDARD FINISH, COLOR BY ARCHITECT WIRED BY EC 6 BAKED ENAMEL FINISH, COLOR BY ARCHITECT 24 UNIT MOUNTED THERMOSTAT - MOUNTED & WIRED BY EC 8 R-I-S VIBRATION ISOLATION HANGERS 25 HARDWIRE INTERLOCK ASSOCIATED	CAV-16 16 - 2,800 2,800 2,800 1 0.25 0.70 25 25 95.0 7.0 1-1/4 5.0 0.65 2 24 x 16 - 5,000 5,000 5,000 1 0.25 0.70 40 30 94.0 10.0 1-1/4 5.0 0.65 2	V1-15 VAV-6 220 66 132 0.50 3/4 - V1-16 VAV-6 230 92 138 0.50 3/4 -	GPM 20 16
MEDIUM VELOCITY SUPPLY +3" A - LOW VELOCITY SUPPLY +1" B -	9 14" HIGH INSULATED ROOF CURB, COORDINATE WITH MOTORIZED DAMPER WITH FAN STRUCTURAL & GC WORK. ROOF CURB TO MATCH ROOF 26 HARDWIRE INTERLOCK FAN TO REFRIGERANT SLOPE. MONITOR PANEL	NOTES: 1. ROOM NC LEVEL SHOWN INCLUDES ATTENUATION TRANSFER FUNCTIONS OBTAINED FROM TABLES IN ARI STANDARD 885-98. 3. SOUND LEVELS INDICATED ARE MAXIMUM VALUES. MANUFACTURERS TO PROVIDE "FIBER-FREE" SOUND	V2-1 VAV-6 275 165 165 0.50 3/4 - V2-2 VAV-10 675 338 405 1.16 3/4 -	- - - - - -
RETURN / RELIEF	10 HINGED BASE 11 UL 762 LISTING PROVIDED BY HC WITH UNIT: 12 GREASE TERMINATOR 31 WALL MOUNTED THERMOSTAT - MOUNTED &	2. SOUND DATA SHALL BE OBTAINED FROM TESTS CONDUCTED ATTENUATORS AS REQUIRED TO MEET REQUIREMENTS. IN ACCORDANCE WITH ARI STANDARD 880-98.	V2-3 VAV-8 560 168 336 0.97 3/4 - V2-4 VAV-6 150 50 90 0.50 3/4 -	TOTAL CL'G MBH 254.9 238.0 - ENT. AIR TEMP. DB/WB TEMP. 78.6/65.5 77.7/64.8 -
OUTSIDE AIR -0.5" C -	13 STAINLESS STEEL BIRDSCREEN WIRED BY EC 14 ELECTRONIC SPEED CONTROLLER 32 UNIT MOUNTED THERMOSTAT - MOUNTED & 15 LOCKABLE DISCONNECT, FACTORY MOUNTED AND WIRED WIRED BY EC 16 GRAVITY SHUTTER 33 INTEGRAL THERMOSTAT - FACTORY MOUNTED	ALD DISTRIBUTION DEVICES	V2-5	
	16 GRAVITY SHUTTER 33 INTEGRAL THERMOSTAT - FACTORY MOUNTED 17 SHUTTER GUARD & WIRED 18WHITE ALUMINUM GRILLE	AIR DISTRIBUTION DEVICES OWBE - OFF WHITE BAKED ENAMEL FINISH ECL - ETCHED CLEAR LACQUER FINISH	V2-8 VAV-8 410 123 246 0.71 3/4 -	O
NOTES 1		TAG DESCRIPTION MOUNTING TYPE CONSTRUCTION TYPE FINISH REQ'D	V2-9 VAV-8 610 183 366 1.05 3/4 - V2-10 VAV-8 210 63 126 0.92 3/4 - V2-11 VAV-6 320 96 192 0.55 3/4 -	10.5 9.2
	HYDRONIC HEATING UNITS	S1 SUPPLY 24"x24" ACCY ACCY SUPPLY SUPPLY SURFACE ALUM. STEEL O.W.B.E. E.C.L. BY ARCH. SQUARE - PLAQUE -	V2-11	- TYPE - FINAL 2" PLEATED MERV 8 - 28.9 - 28.9
LOUVERS	- HEATING CAPACITY BASED ON 60°F ENT AIR & 200°F ENT WATER, 170°F LWT	S2 SUPPLY 12"x12" • • SQUARE - PLAQUE 2 S3 SUPPLY AS NOTED • • SUPPLY GRILLE 1	V2-13 VAV-6 330 99 198 0.57 3/4 - V2-14 VAV-6 290 87 174 0.50 3/4 - V2-15 VAV-10 730 219 438 1.26 3/4 -	FACE AREA S.F. P.D. IN. W.C. CLEAN/DIRTY
TAG SERVICE SIZE CFM P.D. SQ. FT NOTES	TAG DESCRIPTION MOUNTING ELECTRICAL DATA CFM CAP'Y BTUH GPM RUNOUT SIZE (IN) PD FT MFG. MODEL REQ'D ACCESS		V2-16 VAV-6 330 99 198 0.57 3/4 - V2-17 VAV-6 180 54 108 0.50 3/4 -	OUTSIDE AIR - CFM (MIN.) 2130 1600 -
L-1 RELIEF 4" 44" 7600 0.11 8.33 1,2,3,4,6 L-2 INTAKE 4" 44" 7600 0.11 8.33 1,2,3,4,6	CUH-1 CABINET UNIT HEATER LOBBY CEILING CONCEALED 120 1 1/10 430 29,800 2.98 3/4 1.00 - - 5,2 CWW 2 CABINET UNIT HEATER CLOSA MOUNTED 430 29,800 2.98 3/4 1.00 - - 5,2	R1 RETURN 24"x24" • • EGGCRATE RETURN GRILLE - R2 RETURN 24"x12" • • EGGCRATE RETURN GRILLE -	V2-18 VAV-6 280 84 168 0.50 3/4 -	REQ'D ACCESS. 1,2,3,4,5 - REQ'D ACCESS.
L-3 RELIEF 4" 44" 44" 7600 0.11 8.33 1,2,3,4,6 L-4 INTAKE 4" 44" 44" 7600 0.11 8.33 1,2,3,4,6	CUH-2 CABINET UNIT HEATER MECHANICAL ROOM FLOOR MOUNTED 120 1 1/15 230 16,400 1.64 3/4 0.20 - - 1,4 CUH-3 CABINET UNIT HEATER MECHANICAL ROOM FLOOR MOUNTED 120 1 1/15 230 16,400 1.64 3/4 0.20 - - 1,4	R3 RETURN AS NOTED • • RETURN GRILLE 1 R4 RETURN AS NOTED • • RETURN GRILLE 1		1. KNOCKDOWN TYPE UNIT. UNIT SHALL BE CAPABLE OF BEING OF ASSEMBLE ON SITE. CONTRACTOR SHALL ASSEMBLE UNIT ON SITE. 2. SPRING ISOLATORS FURNISHED BY UNIT MFR.
L-5 EXHAUST 1.5" 12" 12" 225 0.01 0.37 1,2,3,4,5 L-6 EXHAUST 1.5" 12" 12" 75 0.01 0.37 1,2,3,4,5		E1 EXHAUST AS NOTED • • EGGCRATE RETURN GRILLE -	NOTES: 1	 3. PROVIDE BASE RAILS IF REQUIRED FOR TRAP HEIGHT. 4. PROVIDE AC CONDENSATE DRAIN PUMP AND PIPE TO NEARES PUMP SHALL BE SIZED FOR MIN. 20 FT. HD.
L-7 EXHAUST 1.5" 12" 12" 150 0.01 0.37 1,2,3,4,5 L-8 EXHAUST 1.5" 12" 12" 150 0.01 0.37 1,2,3,4,5				5PROVIDE 3-WAY CONTROL VALVE FOR HOT WATER AND CHI
L-9 EXHAUST 1.5" 12" 12" 75 0.01 0.37 1,2,3,4,5 L-10 EXHAUST 1.5" 12" 12" 225 0.01 0.37 1,2,3,4,5	REQ'D ACCY:: 1. UNIT MOUNTED ADJUSTABLE LINE VOLTAGE THERMOSTAT WITH GRADUATED DIAL. 2. WALL MOUNTED THERMOSTAT. 3. STANDARD COIL	REQ'D ACCY: 1. OPPOSED BLADE DAMPER 2. TRIM RING		
	3. STANDARD COIL 4. TOP OUTLET GRILLE AND BOTTOM INLET GRILLE. 5. FRONT OUTLET, BACK INLET. 6. HORIZONTAL VANE DISCHARGE. 7. UNIT MOUNTED LINE VOLTAGE THERMOSTAT FURNISHED WITH UNIT.			
1 CONTRACTOR SHALL PROVIDE INSULATED SHEETMETAL PLENUM BEHIND ALL LOUVERS. 2 COLOR OF LOUVER SELECTED BY THE OWNER.			PU	JMPS
3 CONTRACTOR TO FIELD-VERIFY EXISING OPENING SIZE. ADJUST LOUVER SIZE TO MATCH EXISTING OPENING SIZE. 4PROVIDE BIRDSCREEN. 5PROVIDE MOTORIZED DAMPER. WIRE TO OPEN WHEN THE ASSOCIATED FAN	STEAM PRESSURE REDUCING VALVE AND RELIEF VALVE	AMBIENT TEMP 95°F DB CHILLER(S) FLECTRICAL DATA REO'D	TAG DESCRIPTION SERVICE TYPE CAPACITY GPM FT H	CITY MOTOR DATA FT HD BHP/HP VOLT. PHASE RPM RFT FT SUCT
OPERATES 6PROVIDE MOTORIZED DAMPER. WIRE TO ASSOCIATED AIR HANDLER CONTROLS.	STEAM PRESSURE REDUCING VALVE TAG INLET PRESSURE OUTLET PRESS. CAP'Y VALVE REQUIRED REQ'D ACCESS VALVE RELIEF PRESSURE CAP'Y OUTLET PRESSURE OUTLET PRESS. CAP'Y VALVE REQUIRED REQUIRED REQ'D ACCESS VALVE RELIEF PRESSURE CAP'Y OUTLET PRESSURE OUTLET PRESS. CAP'Y VALVE REQUIRED REQUIRED REQ'D ACCESS VALVE RELIEF PRESSURE CAP'Y OUTLET PRESSURE REDUCING VALVE REQUIRED REQUIRED REQ'D ACCESS VALVE RELIEF PRESSURE CAP'Y OUTLET PRESSURE REDUCING VALVE REQUIRED REQUIRED REQ'D ACCESS VALVE RELIEF PRESSURE CAP'Y OUTLET PRESSURE REDUCING VALVE REQUIRED REQUIRED REQUIRED REQ'D ACCESS REQUIRED REQU	TAG DESCRIPTION EWT °F LWT °F GPM PD (FT) TONS NPLV / EER ELECTRICAL DATA VOLTS PHASE MCA MOCP MFR MODEL REQ'D ACCESS CH-1 AIR-COOLED CHILLER 56 44 100 11.7 48 14.9/9.6 208 3 246 250 - 1 1,2,3,4,5	HWP-1 IN-LINE HOT WATER CENTRIFUGAL 74 75	75 2.8/3.0 208 3 3450 2 51 1.5 75 2.8/3.0 208 3 3450 2 51 1.5
	TAG INLET PRESSORE OUTLET PRESS. CAP T VALVE REQUIRED CV SIZE (IN) SIZ		CWP-1 BASE MOUNTED CHILLED WATER CENTRIFUGAL 89 67	67 2.5/5.0 208 3 1760 5 60 2.5 67 2.5/5.0 208 3 1760 5 60 2.5
			CWP-3 IN-LINE CHILLED WATER CENTRIFUGAL 100 50	50 2.2/3.0 208 3 1760 5 60 2
		REQ'D ACCESS 1. FACTORY MOUNTED DISCONNECT 4. WATER FLOW SWITCH 2. VIBRATION ISOLATORS 5. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS 3. SINGLE POINT POWER CONNECTION	REQ'D ACCESS 1. INCLUDE SUCTION DIFFUSER	
	REQ'D ACCESS (INCLUDE ALL): 1. INCLUDE EXTERNAL STEAM PILOT CAPABLE OF +/- 1% ACCURACY. 2. NOISE LEVEL TO BE MAX. 85 DB.	3. SINGLE POINT POWER CONNECTION	2. PROVIDE VIBRATION ISOLATION PER SPEC SECTION 230541. 3. INCLUDE VFD. 4. PUMPS ARE SIZED FOR 100% REDUNDANCY.	
		CONVECTORS		
		- HEATING CAPACITY BASED ON 65 °F ENT AIR & 200 °F ENT WATER, 170 °F LWT	STEAM CC	ONVERTERS
	HYDRONIC FINNED TUBE	TAG DESCRIPTION MOUNTING MFR MODEL # OF TUBES/ CAP'Y GPM PD FT CABINET DIMENSIONS REQ'D		L EWT °F LWT °F STEAM TUBE VEL FPS MFG.
	- 200°F ENT WATER TEMPERATURE - 170°F LVG WATER TEMPERATURE	SURFACE		170 200 15 2.45 - 170 200 15 2.45 -
	TAG DESCRIPTION FIN SIZE(IN) TIERS FINS PER FOOT SIZE(IN) FT HEIGHT DEPTH HEIGHT ELEMENT MODEL REQ'D ACCESS			
	FT-1 FINNED TUBE 4-1/4 1 50 3/4 1190 4 5-1/4 12 3'-0" - ALL	REO'D ACCESS	REQ'D ACCESS 1. CONVERTERS ARE SIZED FOR 100% REDUNDANCY 2. SIZE STEAM CONTROL VALVE FOR 15 PSI PRESSURE DROP.	
	FT-2 FINNED TUBE 4-1/4 1 50 3/4 1190 4 5-1/4 12 3'-0" - ALL FT-3 FINNED TUBE 4-1/4 1 50 3/4 1190 4 5-1/4 12 3'-0" - ALL FT-4 FINNED TUBE 4-1/4 1 50 3/4 1190 4 5-1/4 12 3'-0" - ALL	1. UNIT MOUNTED THERMOSTAT.	CONDENSATE	RECEIVER PUMP
	FT-4 FINNED TUBE 4-1/4 1 50 3/4 1190 4 5-1/4 12 3'-0" - ALL FT-5 FINNED TUBE 4-1/4 1 50 3/4 1190 4 5-1/4 12 3'-0" - ALL FT-6 FINNED TUBE 4-1/4 1 50 3/4 1190 4 5-1/4 12 3'-0" - ALL			T RECEIVER PUNIP T RECIEVER ELECTRICAL DATA REQ'D A REQ'D A
	FT-7 FINNED TUBE 4-1/4 1 50 3/4 1190 4 5-1/4 12 3'-0" - ALL	\dashv l	CP-1 CONDENSATE RETURN 18 20 3500 1" 2"	25 1/3 120 1 1,2,3
	REQ'D ACCESS 1. SLOPE TOP ENCLOSURE. 2. 2-WAY CONTROL VALVE			BRATION ISOLATION AS RECOMMENDED BY UNIT
ENGINEER SH SH	3. ROOM THERMOSAT		2. DISCHARGE PRESSURE GAUGE 3. MECHANICAL ALTERNATOR (FLOW SWITCH INSIDE RECEIVER) 4. PUMP SUCTION ISOLATION VALVES	≟R.
CKER SS		Revised By: Drawing Title	Project Title	Date
WNER REVIEW DOCUMENTS FOR BID DOCUMENTS 01/18/2013 01/31/2013	Dynamix Engineering Ltd.	HVAC SCHEDULES AN	AND DETAILS MODERNIZE HVAC, B-115	01-31-2013 Project No.
	Facility Engineering Consultants	7049/\$		552-13-301
		Approved: Project Engineer	er Building Number Checked Drawn	
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